

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Automation Configuration Management System Envisioning Data Call

REFERENCES: Memorandum from MG Beauchamp, dated 23 May 1997, "Automation of Configuration Management, Engineering Change Proposal Processes and the Technical Loop"

ACMS Task Force Meeting, 13 and 14 August 1997

1. As discussed at the referenced meeting the ACMS Task Force will conduct a major week-long meeting from 20 - 24 October 1997 to continue the process of developing a performance specification for the ACMS. Each Major Subordinate Command (MSC) needs to support and assist this meeting by providing the requested information and by participating in the meeting to formulate the Army's requirements for ACMS. As stated in the referenced memorandum, this is another demand on already scarce resources, but it is a sacrifice that must be made if we are to be able to survive in the times ahead. The purpose of this memorandum is to provide initial information regarding the scope and content of the meeting, to inform you of additional information which will be provided to you to facilitate your active participation in the meeting, and to solicit information from you which will be needed prior to the meeting in order to facilitate efficient conduct of the meeting.
2. The purposes of this meeting are to identify and obtain consensus on (1) the business problem which ACMS will address and the vision of how ACMS will address the business problem, (2) the operational concept for ACMS, (3) the specific capabilities/requirements which ACMS will provide in executing the operational concept and in meeting the Army's vision, and (4) any interface, environmental, support and ownership, and performance constraints which must be accommodated by ACMS. This approach represents a slight change from the approach presented at the referenced meeting. Discussion of the business problem and vision reflects the need to come to a common understanding of the specific factors which will be critical to ACMS success in supporting Army objectives. Interviews with PDM vendors have suggested that this vision of how ACMS is expected to improve the way that the Army conducts its business is as important as characterizing the features/capabilities which the ACMS must provide. The need to identify and obtain consensus on an operational concept for ACMS follows up on discussions conducted during the March meeting of the ACMS Task Force. It also reflects the observation that legacy system (such as CMIS) requirements are both too cumbersome and too closely wedded to the "old" way of doing business to serve as a basis for the Army's future vision. Proposed capabilities/requirements will reflect the Army's desire to treat engineering data as a corporate resource to be widely accessible and shared, and the desire to leverage commercially available Product Data Management (PDM) capabilities.
3. Attachment A describes the types of ACMS functional capabilities/requirements that will be presented at the meeting. As a preview, Attachment B provides a framework of commercially available Product Data Management (PDM) system capabilities. Attachment A also identifies additional information that will be sent to you prior to the October meeting and includes instructions for preparing inputs to the meeting. These instructions describe what information is requested, identify the template for providing the information, and specify the format in which the information is desired. Attachments C through L are referenced by Attachment A and provide templates for submitting requested information. Note that the information requested via these attachments is needed not later than 10 October 1997 in the formats specified in Attachment A.
4. The 20 - 24 October 1997 meeting will be held at U.S. Army Tank- Automotive and Armaments Command (TACOM) in Warren, MI. If you have questions or comments, contact me at the referenced phone number.

/s/

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Attachment A
ACMS Information Request and Instructions

1. This Attachment describes the types of ACMS functional capabilities/requirements that will be presented at the 20 - 24 October 1997 ACMS meeting. It also identifies additional information that will be sent to the ACMS Task Force prior to the October meeting and includes instructions for preparing inputs to the meeting.
2. The ACMS functional capabilities/requirements which will be presented at the meeting will be of two basic types. The first type will be based on current commercial PDM system capabilities. These capabilities will identify those features of current PDM systems which the Army will need in ACMS, and will serve as a filter for eliminating other system types (e.g., electronic document management systems, pure workflow systems) from consideration. Attachment B provides a current PDM capabilities framework which has been formulated from information provided by CIMData and discussions with PDM vendors. You are requested to review and become familiar with this framework because the presentation of this first type of capabilities at the meeting will be organized in accordance with this framework. Comments on the PDM Capabilities Framework may be provided prior to the meeting as either Microsoft Word 6.0 or Excel 5.0 tables using the format presented in Attachment C. The second type of requirements/capabilities to be discussed will be Army-specific requirements which are selected from DOD-specific documents such as the CMIS Software Requirements Specification, MIL-STD 2549, and MIL-HDBK 61. Strawman drafts of both of these requirements types, as well as the business problem, vision, and operational concept, will be provided for your review prior to the meeting by 8 October 1997. These drafts will be the basis for discussion at the meeting. You will be requested to review these documents and to come to the meeting with additions, modifications, and deletions. To the extent that detailed comments or requirements can be formulated and sent to BDM prior to the October meeting, this should be done.
3. To ensure efficient conduct of the meeting, information must be collected and analyzed prior to the meeting regarding interface, environmental, support and ownership, and performance constraints on ACMS. BDM intends to present the provided information organized by MSC and will develop proposed requirements which will address the constraints presented by the commands. You are requested to provide the information in these four areas as described in Attachments D-L as soon as possible, but no later than 10 October 1997. Responses should be submitted as either Microsoft Word 6.0 or Excel 5.0 tables. Responses and questions regarding submission to BDM may be directed to Mr. James Cox, BDM Federal, (703) 848-6739, e-mail: jcox@bdm.com.
 - 3.1 Interface constraints address systems replaced by ACMS, subsumed by ACMS, or interfacing with ACMS. MSCs should identify and provide data on these systems as requested in Attachments D and E.
 - 3.2 Environment constraints include limitations due to existing or expected networking and communications infrastructures, available or procurable hardware and software configurations, and security requirements. Attachment F provides a list of questions and a response template for environmental constraints. Attachment G provides a strawman list of security capability requirements. Comments on and additions to this list of security capabilities should be provided in the form suggested by Attachment H.
 - 3.3 Support and ownership constraints deal with system administration limitations; availability and maintenance requirements; skill, experience, and training constraints, and ACMS tailoring requirements. Attachment I poses questions relative to support and ownership. Responses to these questions should be posed in the form of requirement statements as suggested by Attachment J.
 - 3.4 Performance constraints involve specifying expectations on system responsiveness. Attachment K poses questions relative to performance constraints. Responses to these questions should be posed in the form of requirement statements as suggested by Attachment L.

Appendix B

ACMS PDM Capabilities Framework

Capability/Feature	Description	Source
<i>User interface</i>	Provides for the interaction between the user and the system. Key issues associated with user interfaces include ease of use in terms of the number of steps required to perform an operation, the order of steps, and the amount of automatically transferred information. Another key issue is the ease in which the interface is learned and re-learned.	CIMData PDM Buyer's Guide
User interface styles	The following provide examples of possible user interfaces. A system often provides a mixture of user interfaces.	
Graphical user interface	Provide a graphical point and click user interface based on GUI standards such as OSF/Motif and MS-Windows.	CIMData PDM Buyer's Guide (with modifications)
Forms-based user interface	Provide a forms-based interface where defaults are provided which the user may override via pick lists or typed entries.	CIMData PDM Buyer's Guide (with modifications)
Menu-driven user interface	Provide a hierarchical menu driven user interface. Suppress functions not currently available to a user due to location in the menu tree or access restrictions.	CIMData PDM Buyer's Guide (with modifications)
Command-line user interface	Provide for command-line instructions directly from the user.	CIMData PDM Buyer's Guide (with modifications)
On-line support		
On-line, interactive, context sensitive help	Provide context sensitive, on-line, interactive help to users.	CIMData PDM Buyer's Guide
On -line documentation	Provide system documentation on-line.	CIMData PDM Buyer's Guide
<i>User functions</i>		
Data Vaulting	Provides for secure, controlled storage of data sets managed by the PDM system.	CIMData PDM Buyer's Guide
Secure data storage	Provides for secure storage of product data sets in accordance with defined access control permissions and rules (see Access control). Data sets stored include product data files and/or documents (native or standard formats), metadata associated with managed product data, administrative data, references to data external to the PDM system, records in an associated database, and electronic forms such as ECPs.	CIMData PDM Buyer's Guide

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Access control	Provides for establishment and maintenance of user and/or file access permissions associated with check-in and check-out of product data, as well as reading, writing, copying, and editing files and records under the control of the PDM system. Also provides for checking the identity and authorizations of users. Restricts access as defined by access control permissions and rules. Blocks unauthorized attempts to access controlled files.	CIMData PDM Buyer's Guide (with extensions)
Access authorization management	Provides for the establishment and maintenance of user and/or file access permissions and rules based on user identity and defined needs, file type, or data release status. These access permissions and rules are used to control check-in and check-out operations, as well as specific read, write, copy, and edit operations.	VPSCii Guide (with extensions)
Authorization monitoring & blocking	Provides for monitoring requests for data and blocking or granting requests based on established permissions and access control rules.	VPSCii Guide (with extensions)
Check-in control	Provides for moving files or information (e.g., database records) from a user's workspace to the vault in accordance with user or file permissions in such a way that created, modified, or promoted data is placed under the security, access, change, and release control of the PDM system. The location of the data in the vault is usually hidden from the user.	CIMData PDM Buyer's Guide & VPSCii Guide
Check-out control	Provides for moving files or information (e.g., database records) from the vault to a user's workspace in such a way that the files or information are locked and prevent multiple users from attempting to modify the data simultaneously. The location of the data in the vault is usually hidden from the user.	CIMData PDM Buyer's Guide & VPSCii Guide
Metadata management	Provides for the maintenance, tracking, & auditing of information about the product data. Includes identification and location of data, keywords, ownership data, approval authorizations, release levels, format of data, generating application, etc. The metadata can take the form of file headers, labeling data stored in a database, or reference data contained in a separate reference file.	CIMData PDM Buyer's Guide & CIMData PDM Definition Brochure (with extensions)
Data Locating	Provides mechanisms/techniques for locating desired product data.	

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Capability/Feature	Description	Source
Classification	Provides for the association of attributes to product data that effectively groups the product data by common characteristics. Grouped product data can take the form of standard or similar parts, components, processes, documents, database records, and other design information. Example of class types include function codes, shapes, material, release date, revision, designer, project, owner, creation date, and other attributes.	CIMData PDM Buyer's Guide & VPSCii Guide
Search	Provides the ability to search for product data using established classification schema. These schema tend to be hierarchical and can be used to search for product data. Searching via classification metadata often can be conducted by specifying specific values or ranges of values along with logical combinations of search criteria. Boolean operations can be used to create standard or ad hoc metadata queries. The queries can be fill-in-the-blank or command-line in nature. Retrieval is accomplished via the check-out features provided by the PDM system..	CIMData PDM Buyer's Guide & CIMData PDM Definition Brochure (with extensions)
Data linking (relationships)	<p>Provides for the establishment of links (relationships) between pieces of product data. The links represent relationships which can be navigated to find data.</p> <p>In simple cases, the links involve recording the location (file pathname) in either a database or as an embedded piece of information in the parent piece of data. More complex links record the data location in a database along with other information about the data such as version or release status, quantity, effectivity, and cost of the item. Other complex links can be objects which represent the relationship between data items.</p> <p>The PDM system should automatically track and maintain proper version compatibility for linked members of a data set.</p>	VPSCii Guide & CIMData PDM Buyer's Guide (with extensions)
Product configuration navigation	Provides a means for viewing a product's configuration via the established data links. This in turn is used to find a specific item within the product's configuration. In other words, navigation uses the links as a means to view a product configuration which in turn is used to find a specific item within the product's configuration.	VPSCii Guide & CIMData PDM Buyer's Guide (with extensions)
Electronic approvals	Provides for electronic indication of approval along with the name of the approver and a date and time stamp. Can be used for ECP approvals, access approvals, release approvals, indication of task completion, etc.	VPSCii Guide

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Capability/Feature	Description	Source
Release management	Provides for electronic indication of data versions and release status. Also provides a mechanism for capturing and recording approval authorizations. Usually only changes after passing a pre-defined release approval process. User access to released information is based on access control parameters.	CIMData PDM Buyer's Guide & CIMData PDM Definition Brochure
History capture	Provides for recording changes in file or information status. Often accomplished via event logs. Another approach is to use history fields that show the change status of a file or information along with a date and time stamp. Record or file snapshots with data and time stamps can also be used to record history information.	VPSCii Guide (with extensions)
Workflow & process management	<p>Provides for or makes use of tools to define, execute, control, and monitor tasks that combine to make up a process or workflow. Workflows define the serial and/or parallel paths of tasks, stations (work locations or task owners/performers), or milestones that constitute a process.</p> <p>PDM systems with workflow managers often include the ability to develop static or dynamic workflows. The workflow managers provide for the movement of files or file representations through the workflow in accordance with rules, event triggers, or electronic approvals that signify task or step completion.</p> <p>Workflow managers rely on data vaulting features to provide for data storage and access control. Workflow managers also rely on data locating features to find data, history capture features to record the history of the workflow, and communications and messaging features to provide for electronic distribution of information associated with a specific process or workflow. In summary, automated workflow involves process automation plus electronic data storage, location, retrieval, distribution, notification, approval, access control, event triggering, history capture, and auditing.</p>	CIMData PDM Buyer's Guide & VPSCii Guide (with extensions)
Workflow administration	Provides for the establishment, control, and monitoring of workflows.	CIMData PDM Buyer's Guide
Pre-defined workflow definition	Provides the ability to define and save pre-defined workflow templates that automate regular and repeatable processes. Can include sequential, parallel, and conditional steps. Can specify voting, routing, and time-out rules. Defines action triggers, information distributions, and event notification.	CIMData PDM Buyer's Guide & VPSCii Guide (with extensions)

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Capability/Feature	Description	Source
Ad hoc workflow definition	Provides the ability to define ad hoc workflows that automate ad hoc processes. Can include sequential, parallel, and conditional steps. Can specify voting, routing, and time-out rules. Defines action triggers, information distributions, and event notification.	CIMData PDM Buyer's Guide & VPSCii Guide (with extensions)
Workflow alteration	Provides the ability to alter pre-defined or ad hoc workflows as the need arises.	
Folder/package assembly & maintenance	Provides the ability to collect product data files or file representations to be attached to the workflow.	
Workflow authorizations & access controls	Provides for the designation of information authorizations using the data vaulting access control capabilities. Authorizations can be specified by user, group, or item status.	CIMData PDM Buyer's Guide & VPSCii Guide (with extensions)
Workflow tracking & monitoring	Provides the ability to determine the progress of a defined workflow and to monitor the workload of resources associated with multiple workflows..	
Workflow history & audit	Provides for capturing information on the performance of a workflow and to review the events and results associated with the workflow.	CIMData PDM Buyer's Guide & VPSCii Guide (with extensions)
Workflow routing	Provides the ability to move files or file representations through a defined workflow.	VPSCii Guide
Event triggers	Provides for the initiation of a workflow step based upon the occurrence of a pre-defined event.	VPSCii Guide (with modifications)
Workflow messaging & notification	Provides for the distribution of folders or packages and the transmission of notifications.	CIMData PDM Buyer's Guide
Task or product electronic sign-off	Provides for electronic indication of approval or authorization. Can be used to signify task completion or product sign-off.	VPSCii Guide
Product structure management	Facilitates the creation and management of product configurations and Bill of Material (BOM) as configurations change over time. Provides for tracking versions, effectivities, and design variations.	CIMData PDM Buyer's Guide
Product structure creation & maintenance	Provides for the creation and modification of part lists, assemblies, product configurations, Bill of Material (BOM), and associated documents.	CIMData PDM Buyer's Guide
New structure elements creation for new parts and assemblies	Provides for the creation and association of new structure elements such as assemblies, components, and parts for newly designed items. Structure should be hierarchical and viewable graphically.	CIMData PDM Buyer's Guide
Part, component, or assembly version establishment & maintenance	Provide for the establishment, recording, and maintenance of the version for a given part, component, or assembly. Should accommodate multiple versions of a part, component, or assembly.	CIMData PDM Buyer's Guide (with modifications)

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Capability/Feature	Description	Source
Part, component, or assembly effectivity specification & maintenance	Provides the ability to specify and maintain information on when a part version is valid for use in assembling a particular version of a product. PDM systems should support multiple effectivity schemes within a product structure. Schemes can include serial number, date, and lot.	CIMData PDM Buyer's Guide
Part, component, or assembly substitute or option specification	Provides the ability to identify part options (alternative or substitute parts) for a part, component, or assembly.	CIMData PDM Buyer's Guide
Part, component, or assembly association with a product structure	Provide the ability to establish a hierarchical product structure based on part, component, assembly, and product relationships.	CIMData PDM Buyer's Guide
Part, version, effectivity condition, or option maintenance	Provide the ability to delete or revise product structures. Includes the ability to add, delete, or otherwise modify part or assembly versions and effectivities. Supports changing option indications in terms of alternative or substitute parts.	CIMData PDM Buyer's Guide (with extensions)
PDM managed elements association with a product structure	Permits adding or deleting specific parts or components in an assembly or product structure.	CIMData PDM Buyer's Guide
Product structure search & access	Provide the ability to navigate through a product structure or configuration in order to find an item, retrieve it, or determine where it is used in this or other assemblies or products. The search should be facilitated via a graphical representation of the product structure or configuration.	CIMData PDM Buyer's Guide
Product structure or configuration browsing to find a specific sub-assembly or part	Provide the ability to navigate through a graphical representation of the product structure or configuration in order to locate a specific item.	CIMData PDM Buyer's Guide
Where-used locating	Provided the ability to find where else a part is used in this or other assemblies or products.	CIMData PDM Buyer's Guide
Assembly parts locating	Provide the ability to determine what other parts are used in a given assembly.	CIMData PDM Buyer's Guide
Multiple product structure views and reports creation & maintenance	Provide the ability to develop, display, and print various view of a product structure. These views can show structural relationships, manufacturing processes, documentation, financial, support and repair, and other relationships specified under the data linking capability. Examples include Assembly Parts List Report, Indented Bill of Material Report, Where-Used Parts List Report, Part Information Report, Part Revision History Report, Part Vendor Relationships Reports, and Part Family Relationships Report.	CIMData PDM Buyer's Guide
Product structure access, create, and modify authorizations	Provide the ability to specify authorizations for accessing, creating, and modifying product structures.	CIMData PDM Buyer's Guide

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Capability/Feature	Description	Source
Part-to-engineering data relationship creation & maintenance	Provide the ability to associate engineering data to a specific part.	CIMData PDM Buyer's Guide (modified)
Engineering data -to- engineering data relationship creation & maintenance	Provide the ability to associate a part's engineering data to related engineering data.	CIMData PDM Buyer's Guide (modified)
Assembly, component, and/or part structure decompositions & roll-ups	Provide graphical views of the hierarchical product structure. Shows product to assembly to component to part decompositions and reverse roll-ups.	
Program management	Provides the ability to manage projects in conjunction with their product data.	CIMData PDM Definition Brochure
Work breakdown structure creation & maintenance	Provides for the development and maintenance of a project work breakdown structure (WBS) and allow users to relate PDM controlled items and product structures to the WBS tasks.	CIMData PDM Buyer's Guide
Schedule development & progress monitoring	Provide the ability to establish schedules for WBS tasks and determine the status of tasks as well as the status of PDM controlled items associated with the tasks.	CIMData PDM Buyer's Guide
Resource assignment & tracking	Provide the ability to assign resources to tasks and track the expenditure of those resources.	CIMData PDM Buyer's Guide
<i>Utility functions</i>		
Communications & messaging	Provides for the on-line, automated exchange of general and event triggered information in support of other PDM system functions.	CIMData PDM Buyer's Guide & CIMData PDM Definition Brochure
General message exchange	Provides for the ad hoc exchange of information electronically. Can be accomplished either with an embedded E-mail capability or via an interface with a standard E-mail system. Should include the ability to attach files to messages and route messages to multiple destinations.	CIMData PDM Buyer's Guide & CIMData PDM Definition Brochure
Automatic notification triggering	Provide the ability to automatically generate notification messages based upon event triggers.	CIMData PDM Buyer's Guide & CIMData PDM Definition Brochure
Message management	Provide the ability to manage messages by providing capabilities such as in-boxes, message prioritization, and message binning (folders), archiving, and deletion. Should also include out-box capabilities.	CIMData PDM Buyer's Guide & CIMData PDM Definition Brochure (with extensions)
Standard E-mail systems interfacing	Provides an interface to an enterprise's standard E-mail system. This is required even when the PDM system includes its own embedded E-mail capability.	CIMData PDM Buyer's Guide & CIMData PDM Definition Brochure
Data exchange (transport & translation)		
Transport data		

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ACMS PDM Capabilities Framework

Capability/Feature	Description	Source
File copy or movement on request	Provides the ability to copy or move files from secure data storage to a user's application workspace in response to a user request.	CIMData PDM Buyer's Guide
File copy or movement in response to an application	Provides the ability to copy or move files from secure data storage to a user's application workspace based upon a request from an application.	CIMData PDM Buyer's Guide
File copy or movement in response to an event trigger	Provides the ability to copy or move files from secure data storage to a user's application workspace in response to a pre-defined event trigger or workflow prompt.	CIMData PDM Buyer's Guide
File translation scheduling or initiation	Provides the ability to schedule and route files to appropriate file translators, apply default settings for translations, initiate the translation, and route the output file to the user.	CIMData PDM Buyer's Guide
Electronic systems interfacing	Provide the ability to exchange data with existing repository, PDM, configuration management, and CITIS systems.	
Data transport transaction recording	Provides for recording information about the data transport transaction within the PDM system.	CIMData PDM Buyer's Guide
Translate data		
Automatic translator application in response to triggers	Provide for automatic translation of files to pre-specified formats in response to event triggers or workflow prompts.	CIMData PDM Buyer's Guide
Translator application in response to user requests	Provide for file translation to user specified formats in response to user requests.	CIMData PDM Buyer's Guide
User modifiable default translation parameters	Provide default translation parameters (e.g., destination file location and name, data type, translation format, etc.) that may be modified by the user.	CIMData PDM Buyer's Guide (with modifications)
Translator list & to/from entity mapping creation & maintenance	Provide a list of translators accessible via the PDM system and the formats they accept and create.	CIMData PDM Buyer's Guide (with modifications)
Imaging services		
Viewable image creation	Provides for creation of viewable images that can widely be used by many user communities. Often involves establishing an enterprise standard for viewable images. Can involve invoking translation services (see Translate Data), scanning services, or raster to vector conversions.	CIMData PDM Buyer's Guide & VPSCii Guide
Viewable image management	Provide for placing the viewable images under control of the PDM system (see Data Vaulting).	CIMData PDM Buyer's Guide
Viewable image red-line or mark-up	Provide the ability for multiple reviewers to red-line or mark-up viewable images. Ensure that individual reviewer red-lines are kept distinct.	CIMData PDM Buyer's Guide (with extensions)
Viewable image annotation	Provide the ability for annotations from multiple reviewers. Ensure that individual reviewer annotations are kept distinct.	CIMData PDM Buyer's Guide (with extensions)

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Capability/Feature	Description	Source
Viewable image editing	Provide the ability for selective editing of viewable images.	CIMData PDM Buyer's Guide (with extensions)
Red-lined, annotated, & edited image management	<p>Provide for placing the red-lined, annotated, & edited viewable images under control of the PDM system (see Data Vaulting).</p> <p>Satisfaction of this requirement is dependent on the PDM system's architecture. Some systems manage the red-lined, annotated, & edited images as separate files. Others append the alterations to the viewable image.</p>	CIMData PDM Buyer's Guide & VPSCii Guide
System administration		
Metadata definition & maintenance	Provide the system administrator with the ability to establish and modify metadata defaults.	CIMData PDM Buyer's Guide
User authorization management	Enable the system administrator to establish read, write, copy, and modify rights for individual users, groups of users, or file types.	CIMData PDM Buyer's Guide (with modifications)
Data distribution management	Enable the system administrator to maintain, coordinate, and synchronize a distributed data environment (multiple sites, multiple servers, multiple networks, multiple repositories, multiple PDM systems, etc.).	CIMData PDM Buyer's Guide (with modifications)
Archive, backup, & restore management	Provide the ability to establish and maintain archives and backups. Also permit restoring archives and backups.	CIMData PDM Buyer's Guide & VPSCii Guide
External systems interface management	Provide the system administrator with the ability to establish interfaces with other systems and to manage those interfaces.	
User interface layout tailoring	Provide a capability to customize the PDM system's user interface.	CIMData PDM Definition Brochure
System message & terminology tailoring	Provide a capability to customize the PDM system's messages and terminology.	CIMData PDM Definition Brochure
Third-party applications integration		CIMData PDM Definition Brochure
Application launching	Enable the system administrator to incorporate triggers that result in launching user applications based on events, user actions, or times.	CIMData PDM Definition Brochure (modified)
PDM system function invoking by other applications	Provide API capabilities that enable user applications to initiate selected PDM system functions from the user application without requiring the user to exit his or her application.	
Metadata sharing	Provide API capabilities that permit sharing of PDM system controlled metadata with other systems.	CIMData PDM Definition Brochure (modified)

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ACMS PDM Capabilities Framework

Capability/Feature	Description	Source
New functionality adding	Provide capabilities that allow for extending existing PDM system functionality and adding new functions. Can include defining new fields, tables, queries, reports, and other types of functions.	CIMData PDM Definition Brochure (modified)
System security & monitoring	Provide capabilities that enable the system administrator to establish security controls and monitor the system for security violations.	

Attachment C
PDM Capabilities Framework Comments

Command Name: _____

Date: ____/____/____

POC (Individual Name): _____

Phone: _____ (DSN)

Organization Code: _____

_____ (Com)

E-Mail Address: _____

Comment No	Capability/Feature Name	PDM Capabilities Framework Comment
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

Attachment D
Replacement Systems Capabilities

Command Name: _____

Date: ____/____/____

POC (Individual Name): _____

Phone: _____ (DSN)

Organization Code: _____

_____ (Com)

E-Mail Address: _____

Capability No.	Replaced Capability	Associated PDM Capability
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

Attachment E
Subsumed or Interfacing System Information Exchange

Command Name: _____

Date: ____/____/____

POC (Individual Name): _____

Phone: _____ (DSN)

Organization Code: _____

_____ (Com)

E-Mail Address: _____

Info Exchng No.	Subsumed or Interfacing System Name	Subsumed or Interfacing (S or I)	From/To ACMS	Data Passed
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
14				

Attachment F
Expected ACMS Environment Constraints

Command Name: _____ **Date:** ____/____/____
POC (Individual Name): _____ **Phone:** _____ (DSN)
_____ (Com)
Organization Code: _____
E-Mail Address: _____

Client Configuration: Please indicate the hardware/software systems which end users must employ when using ACMS:

Platform types: *Please select all that apply:*

- | | |
|--------------------|---------------------------------|
| a) IBM-compatible, | f) Silicon Graphics, |
| b) Macintosh, | g) Sun, VAXstation, “ |
| c) DECstation, | h) Dumb” Terminal, |
| d) HP/Apollo, | i) Other (Please describe_____) |
| e) IBM/RS6000, | |

Operating system: *Please select all that apply*

- | | |
|-----------------|---------------------------------|
| a) Windows 3.x, | g) IRIX, |
| b) Windows 95, | h) Open VMS, |
| c) Windows NT, | i) X Terminal, |
| d) Unix, | j) Ultrix, |
| e) MAC, | k) AIX, |
| f) Sun Solaris, | l) HP-UX |
| | m) Other (Please describe_____) |

Hard drive storage: *Please select all that apply:*

- | | | |
|--------------------------------|-----------------|----------------|
| a) Less than 100 MB | b) 100MB to 1GB | c) 1 GB to 5GB |
| d) Other(Please describe_____) | | |

RAM: *Please select all that apply:*

- | | | | | |
|--------------------------------|---------|---------|---------|----------|
| a) 8MB | b) 16MB | c) 24MB | d) 32MB | e) >32MB |
| f) Other(Please describe_____) | | | | |

Speed: *Please select all that apply:*

- | | | | |
|--------------------------------|------------|------------|------------|
| a) Less than 50 MHz | b) 100 MHz | c) 166 MHz | d) 200 MHz |
| e) Other(Please describe_____) | | | |

Network Operating System: *Please select all that apply:*

- | | |
|---------------------------|--------------------------------|
| a) Novell | d) Banyan Vines |
| b) Windows NT | e) None |
| c) LAN Server/Warp Server | f) Other(Please describe_____) |

Attachment F
Expected ACMS Environment Constraints

Network Protocols: *Please select all that apply:*

- | | | |
|---------------------------------|------------|---------|
| a) TCP/IP, | d) DECNET, | g) 3 |
| b) SNA(IBM), | e) X.400, | h) COM, |
| c) IPX/SPX, | f) X.500, | i) NFS, |
| j) Other (Please describe_____) | | |

Topologies: *Please select all that apply:*

- | | | |
|-------------|---------------|--------------------------------|
| a) Ethernet | b) Token Ring | c) Other(Please describe_____) |
|-------------|---------------|--------------------------------|

Total Number of Users: *Please select one:*

- | | | |
|-----------------|-----------|---------------------|
| a) Less than 10 | b) 10-100 | c) Greater than 100 |
|-----------------|-----------|---------------------|

Server Configuration:

Will you be using an existing platform as a server for the ACMS? a)Yes b)No

If yes, please indicate the following:

Platform types: *Please select all that apply:*

- | | |
|------------------------|-----------------------------|
| IBM-compatible 386 | Silicon Graphics |
| IBM-compatible 486 | Sun |
| IBM-compatible Pentium | VAXstation |
| Macintosh | VAX |
| DECstation | IBM Mainframe |
| HP/Apollo | Other(Please describe_____) |
| IBM/RS6000 | |

Platform Operating System: *Please select all that apply:*

- | | |
|-----------------------------|-------------------|
| Unix | IBM MV(mainframe) |
| NT Server | OS/400 |
| IBM MVS | VAX/VMS |
| Other(Please describe_____) | |

Hard drive storage: *Please select all that apply:*

- | | | | |
|---------------------|-----------------|----------------|---------------|
| a) Less than 100 MB | b) 100MB to 1GB | c) 1 GB to 5GB | d) Other_____ |
|---------------------|-----------------|----------------|---------------|

RAM: *Please select all that apply:*

- | | | | | |
|--------------------------------|---------|---------|---------|----------------------|
| a) 8MB | b) 16MB | c) 24MB | d) 32MB | e) Greater than 32MB |
| f) Other(Please describe_____) | | | | |

Speed: *Please select all that apply:*

- | | | | |
|--------------------------------|------------|------------|------------|
| a) Less than 50 MHz | b) 100 MHz | c) 166 MHz | d) 200 MHz |
| e) Other(Please describe_____) | | | |

Attachment F
Expected ACMS Environment Constraints

Locations Using ACMS: *Please specify and provide information for sites within your MSC and for sites external to your MSC which will manage the controlled copy of data which you will use in processes supported by ACMS:*

Site Name	Number of Users	Primary Repository?(Yes/No)	Repository Database (e.g., Oracle, Sybase, etc)

What is the connectivity which is likely to be used between these sites: *Please select all that apply:*

- a) Dedicated link b) modem c) internet d) wide area network
e) Other (Please describe_____)

Are there any firewalls or other restrictions to the traffic which passes between the sites?

- a) Yes b) No

If yes, please describe:_____

Application Interface:

Identify applications and interface level with the ACMS. An integration is a tight coupling between ACMS and the application so they are relatively indistinguishable from each other. An interface is a loose coupling which allows the ACMS to access the application's data but not control the application.

Application	Integration	Interface
Bravo		
AutoCAD		
CADDS		
Medusa		
CADAM		
CATIA		
UG		
HPME10		
HPME30		
SolidDes		
EMS		
EUCLID		
Pro/Engineer		
I-DEAS		
CADENCE		
Dazix		
Mentor		
Racal		
Other(Please describe_____)		

Attachment G

Security Capabilities

Individual User Identification:

ACMS shall provide the capability to identify individual users by name.

User Authentication:

ACMS shall provide the capability to authenticate user identity through the use of a password.

File Name Encryption:

ACMS shall encrypt the names of files with restricted access to preclude accessing these files directly through the operating system without using the ACMS interface.

Assignment to Roles:

ACMS shall provide the capability to assign users to specific “roles”.

Modify Role Assignment:

ACMS shall provide the capability to modify role assignments.

Create, Modify, Delete Roles:

ACMS shall provide the capability to create, modify, and delete “roles”.

Assignment to Groups:

ACMS shall provide the capability to assign users to specific groups

Modify Group Assignments:

ACMS shall provide the capability to modify group assignments.

Create, Modify, Delete Groups:

ACMS shall provide the capability to create, modify, and delete groups.

Restrict Access to Data Owner:

ACMS shall provide the capability to restrict all data access privileges to the data owner. The data owner is defined as the originator of the data.

Restrict Access to Specific Users:

ACMS shall provide the capability to restrict data access privileges to specific users.

Restrict Access to Roles:

ACMS shall provide the capability to restrict data access to users assigned specific roles.

Restrict Access to Groups:

ACMS shall provide the capability to restrict data access to users assigned to specific groups.

Change Data Owner:

ACMS shall provide the capability to change the owner of the data.

Enforce Data Access at Branch Level:

ACMS shall provide the capability to enforce data access restrictions at the branch (folder) level. A branch is defined as a collection of data objects, each of which could be individually accessed.

Enforce Access to Specific Object Attributes:

ACMS shall provide the capability to enforce data access restrictions at the level of data object attributes. A data object attribute is data associated with a data object.

Required Data Access Privileges:

ACMS shall provide the capability to assign the following data access privileges based on specific roles:

- View
- Modify
- Delete
- Create

Attachment H
Security Capabilities Comments

Command Name: _____

Date: / /

POC (Individual Name): _____

Phone: _____ (DSN)

Organization Code: _____

_____ (Com)

E-Mail Address: _____

Comment No	Security Capability Name	Security Capabilities Comments and Additions
1	Individual User Identification	
2	User Authentication	
3	File Name Encryption	
4	Assignment to Roles	
5	Modify Role Assignment	
6	Create, Modify, Delete Roles	
7	Assignment to Groups	
8	Modify Group Assignments	
9	Create, Modify, Delete Groups	
10	Restrict Access to Data Owner	
11	Restrict Access to Specific Users	

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Comment No	Security Capability Name	Security Capabilities Comments and Additions
12	Restrict Access to Roles	
13	Restrict Access to Groups	
14	Change Data Owner	
15	Enforce Data Access at Branch Level	
16	Enforce Access to Specific Object Attributes	
17	Required Data Access Privileges	
18		
19		
20		
21		
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26		
27		
28		
29		
30		
31		

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Attachment I
ACMS Support and Ownership Constraint Questions

Ques No.	ACMS Support and Ownership Constraint Questions
1	What are the minimum qualifications (without training) which you would anticipate for your personnel performing basic ACMS user activities?
2	What are the minimum qualifications (without training) which you would anticipate for your personnel performing basic ACMS administrator activities? Will personnel with more than basic computer skills (such as system or database administration) be available to support ACMS?
3	Should there be a requirement for the amount(s) of training time needed for basic users and for administrators? If so, what should those times be?
4	What sort of Help system should be available for users and administrators? Select all which are appropriate: <ul style="list-style-type: none"> • Context sensitive automated help • Help topics indexed alphabetically] • Help topics searchable by keyword • Help Table of Contents • Help Examples and Demos • Non-automated user and administrator manuals
5	Should there be a requirement for maximum allowable downtime associated with routine maintenance (e.g. backup, database administration) If so, what would you recommend?
6	Identify all systems for which it will be necessary to implement an automated conversion of legacy data from that system to ACMS.

Attachment J
Expected ACMS Support and Ownership Constraints

Command Name: _____
POC (Individual Name): _____
Organization Code: _____
E-Mail Address: _____

Date: ____/____/____
Phone: _____ (DSN)
 _____ (Com)

Constraint No.	ACMS Support and Ownership Constraining Requirement
1	
2	
3	
4	
5	
6	

Attachment K
ACMS Performance Constraint Questions

Ques No.	ACMS Performance Constraint Questions
1	What is the maximum expected response time to the following ACMS user requests? <ul style="list-style-type: none">• Navigation through product structure• Retrieval and viewing of simple documents (e.g., text)• Retrieval and viewing of raster based drawings• Retrieval and viewing of engineering models• Response time to changes to data object attributes
2	What is the maximum permissible refresh time? Refresh time is the time in which controlled data within ACMS which is stored in two different locations is not identical.
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

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Attachment L
Expected ACMS Performance Constraints

Command Name: _____

Date: ____/____/____

POC (Individual Name): _____

Phone: _____ (DSN)

Organization Code: _____

_____ (Com)

E-Mail Address: _____

Constraint No.	ACMS Performance Constraining Requirement
1	
2	
3	
4	
5	
6	